

Testimony of Thomas O. Knight
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**Testimony Prepared for the United States House of Representatives
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Mr. Chairman and members of the Committee, I would like to express my appreciation for the opportunity to appear before you today to address a set of issues that are important to agricultural producers in the Western Plains and other regions of the U.S. As a university faculty member whose research over the past fifteen years has concentrated almost exclusively on crop insurance, I will focus my comments on issues relating to the Federal Crop Insurance Program.

When I began conducting crop insurance research in the late 1980s there was considerable frustration with the program. Two primary concerns were participation rates far below anticipated levels and excessively high program loss ratios. These concerns and other crop insurance issues were addressed by Congress in the Federal Crop Insurance Commission Act of 1988; the Food Agriculture, Conservation, and Trade Act of 1990; the Crop Insurance Reform Act of 1994; and the Agricultural Risk Protection Act (ARPA) of 2000. The results of this legislation and related administrative actions have been a substantial increase in participation rates, marked improvement in program loss ratios, and a significant expansion of the range of product offerings for major commodities, specialty crops, and livestock. The Risk Management Agency is currently pursuing the implementation of sections of ARPA directed toward further expansion to more specialty crops, better tailoring of products to meet the needs of producers in underserved states, and providing effective risk management educational programs for producers throughout the country.

While I strongly believe the Federal Crop Insurance Program has achieved its intended mission of serving as the cornerstone of federal risk management programs for the nation's farmers and ranchers, there will always be new issues to be addressed. The

problem of severe, multiple-year disasters is the one I will focus on today. Before moving to a discussion of possible program modifications to more effectively mitigate the effects of such disasters, I think it is important to provide some perspective on the magnitude of the regional disaster with which we are currently confronted. In doing so, I will use non-irrigated cotton yields in three Texas Southern High Plains counties for illustrative purposes.

The counties I examined are Dawson, Martin, and Lubbock. All are major cotton producing counties. Roughly 80% of total cotton acreage in Dawson county is non-irrigated, compared with 90% for Martin county and about one-third for Lubbock county. In Dawson county, the average non-irrigated cotton yield during the 24 year period from 1972-1995 was 278 pounds per acre. The average yield during the seven-year period from 1996-2002 was 143 pounds per acre. In Martin county the 1972-1995 average yield was 303 pounds per acre, compared with a 1996-2002 yield of 120 pounds per acre. Non-irrigated yields in Lubbock county were 271 pounds per acre for the 1972-1995 period and 203 pounds per acre from 1996-2002. What these average county yields illustrate is that the multi-year disaster we are confronting in this region is of long duration and truly catastrophic magnitude.

I think it is important to recognize that the Federal Crop Insurance Program has helped mitigate the financial consequences of the current multi-year disaster in the Southern High Plains. One measure of the Program's effect is net crop insurance payments (indemnities-producer premiums) on all crops during the period 1996-2002. The net cash inflow from crop insurance into the sixteen Southern High Plains counties was \$80 million in 1996, \$152 million in 1998, \$61 million in 1999, \$121 million in

2000, \$198 million in 2001, and \$50 million in 2002. In one year, 1997, producer premiums exceeded indemnity payments by \$3 million. Over the seven year period these net payments total \$659 million, with producers receiving \$3.12 in indemnity payments per dollar of premium paid.

While crop insurance indemnity payments clearly can and have reduced the effects of a multi-year disaster, the effectiveness of the program during and after the disaster period is affected by the influence of the disaster on producers' APH yields (i.e., the yields upon which their insurance coverage offerings are based). I will use Dawson County, Texas average NASS yields for non-irrigated cotton to illustrate this effect. A producer insuring in Dawson County in 1996, who provided yield records based on 10 years of actual yield history equal to the county yields for the period, would have had an APH yield of 281 pounds per acre. By 2003, the same producer's APH yield (again assumed to be equal to the county average) would have declined to 193 pounds per acre. This represents a 31% decrease in the yield upon which the producer's insurance coverage offerings would be based. Clearly, such a reduction in insurance coverage offered to the producer at any coverage level significantly diminishes the effectiveness of crop insurance as a risk management tool. In the remainder of my comments I will address the strengths and weaknesses of mechanisms already in place to dampen the effects of such yield declines, and some additional approaches that might be incorporated into crop insurance programs to further reduce these effects.

The primary mechanisms currently in place to mitigate the effects of catastrophic years on producers' approved APH yields are yield cups, yield floors, and yield substitution. A yield cup places a maximum on the amount by which a producer's

approved APH yield can decline from one year to the next. The current cup limits that decline to 10%. A yield floor places a minimum on a producer's approved APH yield. The current yield floor depends on the number of years of actual yields in a producer's APH records. In most regions the floor is 70% of the county "T" yield for producers with one year of actual yield records, 75% of the county "T" yield for producers with 2-4 years of records, and 80% of the county "T" yield for producers with five or more years of records. Yield substitution procedures were established in the ARPA. This provision allows substitution of a yield equal to 60% of the county "T" yield for any year when a producer's actual yield is below that level. Clearly, yield cups, yield floors, and yield substitution all reduce the effect of catastrophic years; however, the relevant questions are whether changes to any of these mechanisms would afford significant additional protection against multi-year disasters and whether the protection offered would provide reasonably equitable treatment to all producers.

In my opinion, the primary advantage of yield cups, yield floors, and yield substitution is simplicity. The procedures for implementing these provisions are fairly straightforward and easily understood by all involved in the program. However, I believe all three have significant weaknesses as tools for addressing the problem of multi-year disasters of long duration. Analysis I have done indicates that yield cups are most useful in reducing the effects of crop disasters of two or three year duration. When a disaster is of longer duration the current 10% cup has little effect on the long-term APH yield decline. Further, my analysis suggests that raising the cup to a maximum 5% annual decline would have modest additional benefit. In an extended disaster, the effectiveness of both yield floors and yield substitution would be undermined by declines in county

“T” yields. Also, I believe there are important equity considerations relating to yield floors and yield substitution. It is clear that the benefits of both of these mechanisms are greatest for producers whose “normal” or “expected” yields are low, and that the benefits may be very limited for high-yield producers in the same county. For example, an 80% yield floor has great benefit for a producer whose expected yield is 60% of the county “T” yield, but likely very little benefit for a producer whose expected yield is 50% above the county “T” yield. Similarly, the protection offered by yield substitution, at the current 60% level or some alternative higher level, is greatest for low-yield producers and least for producers with high normal yields. Therefore, I believe other mechanisms for dealing with multi-year disasters are worthy of consideration.

Two alternative approaches that I believe are worthy of consideration as alternative mechanisms to deal with multi-year losses are yield indexing and premium subsidy enhancements. These approaches are related in that the premium subsidy enhancements would be structured off of a yield index. In discussing these issues, I will first treat what I will refer to as full indexing. Then I will discuss a disaster index that could be used in either of two ways – to support corrections to APH yields in periods of multi-year disaster or to support premium subsidy enhancements in those periods.

Full indexing would constitute a significant change to the APH yield insurance program. It would involve calculating the relationship, in absolute difference or proportionate form, between historical yields for the insured unit and county average yields in the same years. A predicted county yield for the insurance year, based on a longer county yield time series, would then be adjusted to the unit level based on the relationship between the unit and county level yields. If the county has truly experienced

a string of “bad luck”, the index should give the recent disaster years less weight in predicting next year’s expected yield. Several approaches could be taken in constructing such an index, and it would appear inappropriate to institute such a change without first carefully examining which method would provide the most accurate measure of a unit’s expected yield. Further, it would be critical to determine the extent to which such an approach would mitigate the effects of extended multi-year disasters. While this approach has considerable appeal, there would be significant disadvantages. First, the approach is relatively complex and difficult to understand. Second, producers would likely react negatively to the fact that this approach would actually reduce their approved APH yields in periods of above average yield experience. Finally, incorporating such a change into the APH yield insurance rates, or into the revenue product rates, would likely necessitate significant adjustments to the product rates.

A simpler indexing approach could be formulated to trigger adjustments to current APH yields only in multi-year disaster periods. A long time series of county yields could be used to identify periods satisfying predetermined criteria for multi-year disaster treatment and to determine the appropriate adjustment factor to be applied to producers’ APH yields. It might be possible to use the rate of decline in GRP program county yields to formulate an appropriate index. An advantage to this approach is that it would be simpler and more easily understood than full indexing. Further, it would not result in a reduction in approved APH yields in periods of above average yield experience. Finally, though some rate adjustments would be appropriate, it is less likely that this type of index would require a comprehensive re-rating of the APH yield product

or of the revenue products. Thus, it should be possible to implement such an indexing procedure more quickly than would be feasible for full indexing.

The final approach I will discuss for dealing with multi-year disasters is premium subsidy enhancements. The idea behind this is that the fundamental problem created by multi-year disasters is that producers' APH yields are driven down such that the yield coverage obtained at any given coverage level is much lower than before. A premium subsidy enhancement could be structured to allow producers to purchase higher coverage levels, at reduced cost, in multi-year disaster periods. This could mitigate the effects of declining APH yields on the coverage a producer could obtain at a given cost.

Predetermined criteria could be established for the triggering of a subsidy enhancement and determination of the amount of additional subsidy on the basis of a county-yield based disaster index as described above. A strength of this approach would be that it would require no change in APH yield calculation procedures or in insurance program rate structures. Thus, it could provide a mechanism for dealing with relatively rare multi-year disasters of long duration that would not affect the functioning of the insurance program in periods of normal yields and in regions where such disasters almost never occur. Clearly, such a mechanism would involve increased government cost when subsidy enhancements are triggered. The amount of those costs would depend on the exact design and approach taken.

Again, Mr. Chairman, I appreciate the opportunity to testify before the committee. I will gladly attempt to answer any questions about my comments or related issues.